

WHAT IS CLAIMED IS:

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1.

A selectively adjustable edging and curve-sawing saw comprising:

a selectively skewable sawbox, skewable in a generally horizontal plane about a vertical axis of rotation relative to an infixed path and positionable in said infixed path so as to receive a workpiece translated generally longitudinally along said infixed path and into said sawbox,

said sawbox rotatably supporting, on a selectively rotatable generally horizontal saw arbor selectively rotatable about a generally laterally extending horizontal axis of rotation, a plurality of generally vertically and longitudinally aligned saw blades in parallel selectively adjustable laterally spaced array,

saw blade array spacing selective adjustment means mounted to said sawbox for selective adjustment of lateral spacing between said saw blades in said parallel selectively adjustable laterally spaced array along said saw arbor,

saw translating means for laterally translating said parallel selectively adjustable laterally spaced array relative to said sawbox according to an optimized profile.

2. The saw of claim 1 wherein said saw blade array spacing selective adjustment means and said saw translating means are selectively positionable laterally translatable parallel rigid members extending and translatable generally parallel to said saw arbor, said translatable parallel rigid members rigidly mounted to saw blade guide means for selective slidable lateral positioning of said saw blades along said saw arbor, wherein selective lateral positioning of each of said translatable parallel rigid members selectively laterally positions one corresponding saw blade of said saw blades.

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The saw of claim 1 wherein said saw blade array spacing selective adjustment means are selectively positionable laterally translatable parallel rigid members extending and translatable generally parallel to said saw arbor, said translatable parallel rigid members rigidly mounted to corresponding saw blade guide means for selective slidable lateral positioning of said saw blades along said saw arbor, wherein selective lateral positioning of each of said translatable parallel rigid members selectively laterally positions one corresponding saw blade of said saw blades, whereby lateral spacing between said saw blades may be adjusted prior to lateral translation of said laterally spaced array of said saw blades,

and wherein said saw translating means is selectively actuatable clamping means:

- (a) selectively actuatable to selectively rigidly couple a first translatable parallel rigid member of said translatable parallel rigid members to said translatable parallel rigid members other than said first translatable parallel rigid member when said translatable parallel rigid members other than said first translatable parallel rigid member are free floating by activation of free floating means cooperating with said translatable parallel rigid members, and
- (b) coupling said first translatable parallel rigid member to said saw arbor so as to rigidly couple said first translatable parallel rigid member to said saw arbor in a transverse direction along said horizontal axis of rotation and so as to rotatably couple said first translatable parallel rigid member to said saw arbor about said horizontal axis of rotation,

wherein said first translatable parallel rigid member is selectively actuatable positionable when said translatable parallel rigid members other than said first translatable parallel rigid members are free floating, whereby selective positioning of said first translatable parallel

rigid member according to said optimized profile translates said laterally spaced array of said saw blades according to said optimized profile as said workpiece is translated along said feedpath and through said sawbox.

- 5 4. The saw of claim 1 wherein said saw blades are splined and slidingly mounted on a correspondingly externally splined sleeve, and wherein said sleeve is internally splined and slidingly mounted on external splines on said saw arbor,

10 and wherein said saw blade array spacing selective adjustment means are selectively positionable laterally translatable parallel rigid members extending and translatable generally parallel to said saw arbor, said translatable parallel rigid members rigidly mounted to corresponding saw blade guide means for selective slidable lateral positioning of said saw blades along said sleeve, wherein selective lateral positioning of each of said translatable parallel rigid members selectively laterally positions one corresponding saw blade of said saw blades, whereby lateral spacing between said saw blades may be adjusted prior to lateral translation of said laterally spaced array of said saw blades,

15 and wherein said saw translating means are said translatable parallel rigid members rigidly mounted to said saw blade guide means wherein a first translatable parallel rigid member of said translatable parallel rigid members is clamped, by clamping means, to said sleeve so as to selectively translate said sleeve relative to said saw arbor in unison with said first translatable parallel rigid member.

- 20 5. The saw of claim 1 wherein said array of saw blades are splined and slidingly mounted on a correspondingly externally splined sleeve, and wherein said sleeve is internally splined and slidingly mounted on external splines on said saw arbor,

and wherein said saw blade array spacing selective adjustment means are selectively positionable laterally translatable parallel rigid members extending and translatable generally parallel to said saw arbor, said translatable parallel rigid members rigidly mounted to corresponding saw blade guide means for selective slidable lateral positioning of said saw blades along said sleeve, wherein selective lateral positioning of each of said translatable parallel rigid members selectively laterally positions one corresponding saw blade of said saw blades, whereby lateral spacing between said saw blades may be adjusted prior to lateral translation of said laterally spaced array of said saw blades,

and wherein said saw translating means is selectively actuatable clamping means:

- (a) selectively actuatable to selectively rigidly couple a first translatable parallel rigid member of said translatable parallel rigid members to said translatable parallel rigid members other than said first translatable parallel rigid member when said translatable parallel rigid members other than said first translatable parallel rigid member are free floating by activation of free floating means cooperating with said translatable parallel rigid members, and
- (b) coupling said first translatable parallel rigid member to said sleeve so as to rigidly couple said first translatable parallel rigid member to said sleeve in a transverse direction along said horizontal axis of rotation and so as to rotatably couple said first translatable parallel rigid member to said sleeve about said horizontal axis of rotation,

wherein said first translatable parallel rigid member is selectively actuatable positionable so as to selectively translate said sleeve relative to said saw arbor in unison with said first translatable parallel rigid member when said translatable parallel rigid members other than said first translatable parallel rigid members are free floating, whereby selective

positioning of said first translatable parallel rigid member according to said optimized profile translates said laterally spaced array of said saw blades according to said optimized profile as said workpiece is translated along said feedpath and through said sawbox.

- 5 6. The saw of claim 3 wherein said selectively actuatable clamping means is a tie bar.
7. The saw of claim 4 wherein said selectively actuatable clamping means is a tie bar rigidly coupled to said sleeve in a transverse direction along said horizontal axis of rotation and rotatably coupled to said sleeve about said horizontal axis of rotation.
- 10 8. The saw of claim 5 wherein said selectively actuatable clamping means is a tie bar.
9. The saw of claim 6 wherein said tie bar extends across all of said translatable parallel rigid members and wherein said tie bar includes selectively actuatable clamps, each clamp of said selectively actuatable clamps corresponding to a single translatable parallel rigid member of said translatable parallel rigid members other than said first translatable parallel rigid member.
- 15 10. The saw of claim 8 wherein said tie bar extends across all of said translatable parallel rigid members and wherein said tie bar includes selectively actuatable clamps, each clamp of said selectively actuatable clamps corresponding to a single translatable parallel rigid member of said translatable parallel rigid members other than said first translatable parallel rigid member.
- 20 11. The saw of claim 7 wherein said tie bar only extends from said sleeve to said first translatable parallel rigid member.
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12. The saw of claim 1 wherein said saw blade array spacing selective adjustment means are selectively positionable laterally translatable parallel rigid members extending and translatable generally parallel to said saw arbor, said translatable parallel rigid members rigidly mounted to corresponding saw blade guide means for selective slidable lateral positioning of said saw blades along said saw arbor, wherein selective lateral positioning of each of said rigid members selectively laterally positions one corresponding saw blade of said saw blades, whereby lateral spacing between said saw blades may be adjusted prior to lateral translation of said laterally spaced array of said saw blades,

and wherein said saw translating means are said translatable parallel rigid members rigidly mounted to said saw blade guide means wherein a first translatable parallel rigid member of said translatable parallel rigid members is clamped, by clamping means, to said saw arbor so as to selectively translate said saw arbor in unison with said first translatable parallel rigid member.

13. The saw of claim 12 wherein said selectively actuatable clamping means is a tie bar, extending from said saw arbor to said first translatable parallel rigid member, rigidly coupled to said saw arbor in a transverse direction along said horizontal axis of rotation and rotatably coupled to said saw arbor about said horizontal axis of rotation.

14. The saw of claim 1 wherein edging end blades at either end of said laterally spaced array of said saw blades are chipping heads coupled by gearing means to said saw arbor for optimal rotational speed, in chipping planes parallel to said saw blades, of chipping blades on said chipping heads so as to bring said chipping blades into chip cutting engagement with said workpiece translating generally longitudinally into said sawbox for curve sawing and edging.

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15. The saw of claim 14 wherein said sawbox further comprises chipping anvils corresponding to, and cooperating with said chipping heads, said chipping anvils mounted in close adjacency to arcs of rotation of said chipping blades in said chipping planes, so as to lie at least partially in said chipping planes to provide a bearing and shearing surface against which said workpiece may bear so as to shear chips from said workpiece as said chipping blades engage said workpiece in said chip cutting engagement.

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16. The saw of claim 15 wherein said chipping anvils are rigid members having generally planar bearing surfaces extending generally horizontally, parallel to said saw arbor, and said chipping blades, as they rotate in said arcs of rotation, form an acute angle relative to said planar bearing surfaces as said chipping blades are rotated past said chipping anvils.

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17. The gang saw of claim 16 wherein said gearing means are reduction gears for reducing said rotational speed of said chipping heads relative to a rate of rotation of said saw blades so as to optimize cutting of said chips from said workpiece.

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18. The saw of claim 1 wherein edging end blades at either end of said array of saw blades are chipping heads for chipping edges of said workpiece when said workpiece is translated generally longitudinally into said sawbox for curve sawing and edging.

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19. The saw of claim 18 wherein said sawbox further comprises chipping anvils corresponding to, and cooperating with said chipping heads, said chipping anvils mounted in close adjacency to arcs of rotation of chipping blades, mounted on said chipping heads, in said chipping planes, so as to lie at least partially in said chipping planes to provide a bearing and shearing surface against which said workpiece may bear so as to shear chips from said workpiece as said chipping blades engage said workpiece in chip cutting engagement.

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20. The saw of claim 19 wherein said chipping anvils are rigid members having generally planar bearing surfaces extending generally horizontally, parallel to said saw arbor, and said chipping blades, as they rotate in said arcs of rotation, form an acute angle relative to said planar bearing surfaces as said chipping blades are rotate past said chipping anvils.

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10 21. In a selectively adjustable edging and curve-sawing saw having a sawbox rotatably supporting, on a selectively rotatable generally horizontal saw arbor selectively rotatable about a generally laterally extending horizontal axis of rotation, a plurality of generally vertically and longitudinally aligned saw blades in parallel selectively adjustable laterally spaced array, a method for selectively adjustable edging and curve sawing comprising the steps of:

- 15 20
- (a) skewing a selectively skewable sawbox in a generally horizontal plane about a vertical axis of rotation relative to an infeed path and positioning said sawbox in said infeed path so as to receive a workpiece translated generally longitudinally along said infeed path and into said sawbox,
 - (b) adjusting saw blade spacing within said laterally spaced array by saw blade array spacing selective adjustment means mounted to said sawbox for selective adjustment of lateral spacing between said saw blades in said parallel selectively adjustable lateral spaced array along said saw arbor, and
 - (c) laterally translating, by saw translating means, said laterally spaced array relative to said sawbox according to an optimized profile.